MECKLENBURG COUNTY

Land Use and Environmental Services Agency Code Enforcement

CODE INTERPRETATION

Mechanical/Plumbing

Code Volume Reference: **NC Mechanical Code (2018)**

Code Chapter Reference: **607.3.1**

Subject: **Radiation Dampers in Apartments**

Effective Date: **January 1, 2019**

Prepared/Revision Date: **August 2018**

CODE:

607.3.1 Damper testing. *Dampers* shall be listed and labeled in accordance with the standards in this section. *Fire dampers* shall comply with the requirements of UL 555. Only *fire dampers* and ceiling radiation dampers labeled for use in dynamic systems shall be installed in heating, ventilating and air-conditioning systems designed to operate with fans on during a fire. *Smoke dampers* shall comply with the requirements of UL 555S. *Combination fire/smoke dampers* shall comply with the requirements of both UL 555 and UL 555S. *Ceiling radiation dampers* shall comply with the requirements of UL 555C or shall be tested as part of a fire-resistance-rated floor/ceiling or roof/ceiling assembly in accordance with ASTM E119 or UL 263. Corridor dampers shall comply with requirements of both UL 555 and UL 555S. Corridor dampers shall demonstrate acceptable closure performance when subjected to 150 feet per minute (0.76 mps) velocity across the face of the damper using the UL 555 fire exposure test.

BACKGROUND:

Static radiation dampers installed in the supply duct at the ceiling penetration of floor/ceiling assemblies in apartment buildings. The installation was not code compliant because a dynamic fire radiation damper would be required by UL 555C. Per UL 555C air flowing against the static radiation damper from the air handler could cause the damper to fail open and spread smoke or fire to other areas of the apartment through

the supply duct system. An initial solution of installing a static damper and using a standard room smoke detector was implemented. This caused several issues about the placement of the smoke detector and the way the detector was interlocked with the HVAC unit.

INTERPRETATION:

After researching the issue and possible solutions to provide an equal level of compliance to Section 607.3.1 of the NC Mechanical Code, any of the following are acceptable:

1. A listed UL 555C dynamic radiation damper with the appropriate rating for the assembly.
2. A static damper with a duct detector on the air handling unit to shut down the unit upon detection of smoke.
3. A static damper with a firestat located below the damper to shut down the air handling unit. The firestat shall have a setting between 160 degrees and 215 degrees, but in no case higher than the damper's fusible link.

Please Note: The use of a room smoke detector to shut down the air handling unit will no longer be accepted.

Prepared by: **Consistency Team**

Approved By: _____

Tommy Rowland, ***M/P Code Administrator***